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| EXAMINER |
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CORMIER, DAVID G

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| ART UNIT | PAPER NUMBER |
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1711

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ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patents@ngelaw.com

|                              |                                      |                                   |  |
|------------------------------|--------------------------------------|-----------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/566,767 | <b>Applicant(s)</b><br>CAO ET AL. |  |
|                              | <b>Examiner</b><br>DAVID CORMIER     | <b>Art Unit</b><br>1711           |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,4-6 and 8-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-6 and 8-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments/Amendments***

1. This Office action is responsive to the amendment filed on January 29, 2010. Claims 1, 4-6, and 8-10 are pending. Claims 2, 3, 7, and 11 have been canceled. Claims 1, 4, and 9 have been amended.
2. The rejection of Claims 1-11 under 35 U.S.C. 112, second paragraph, as being indefinite has been withdrawn in response to Applicant's amendments and arguments.
3. Claims 1, 4-6, and 8 were rejected under 35 U.S.C. 102(b) as being anticipated by Sumida et al. (US 5,947,135). Claims 4-6, and 8 were rejected, in the alternative, under 35 U.S.C. 103(a) as being unpatentable over Sumida. Claims 2, 3, and 7 were rejected under 35 U.S.C. 103(a) as being unpatentable over Sumida. Claims 9-11 were rejected under 35 U.S.C. 103(a) as being unpatentable over Hasegawa (JP 10-33448) in view of Sumida. In response to Applicant's amendments, the rejection of Claims 1-11 is withdrawn, and new grounds of rejection are presented below.

### ***Claim Objections***

4. Claims 1, and 4 are objected to because of the following informalities: the second to last line of Claim 1 and the last line of Claim 4 recite the phrase "the washing tube" which appears to mean "the washing tub." Appropriate correction is required.
5. Claim 9 is objected to because of the following informalities: line 11 and the second to last line recite the phrase "the washing tube" which appears to mean "the washing tub." Appropriate correction is required.

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6. Claim 9 objected to because of the following informalities: the phrase "one ore more detergent" in line 8 appears to mean "one or more detergent." Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1, 4-6, and 8-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. Claims 1, 4, and 9 recite the phrase "buffer chamber with a rating volume at the center of volumetric measuring valve." It is unclear what "rating volume at the center of volumetric measuring valve" means. For examination purposes the phrase will be interpreted as meaning the buffer chamber has a volume.

10. Claim 1 recites the limitation "the washing tube" in the second to last line. There is insufficient antecedent basis for this limitation in the claim.

11. Claim 4 recites the limitation "the washing tube" in the last line. There is insufficient antecedent basis for this limitation in the claim.

12. Claim 9 recites the phrases "washing tube" and "washing tub" in various places. It appears that the phrase "washing tube" is a typo; therefore, it will be interpreted as meaning "washing tub." If "washing tube" does not mean "washing tub," then the phrase "washing tub" lacks proper antecedent basis.

***Claim Rejections - 35 USC § 103***

13. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

14. **Claims 1, 4-6 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Sumida et al. (US 5,947,135) in view of Lim et al. (US 5,331,986).**

15. Regarding Claim 1, Sumida discloses a washing machine, “dishwasher,” for washing items (abstract) using washing water without addition of detergent by the user comprising:

- a. a housing (Figure 1, the “heat exchange duct,” 30, is broadly and reasonably interpreted as a housing);
- b. a washing tub for containing the items to be washed (12);
- c. an outer tub for containing the washing tub (Figure 1, the cabinet, not labeled);
- d. a water supply device for supplying water into the washing tub (Figure 1, elements (1, 3, 4, 9-11, 19, 20 and 50));
- e. an electrolyzed water-generating device connected with the water supply device for providing electrolyzed water (2);
- f. the water supply device comprises:
- g. a water supply tube for connection with a tap water source (19);
- h. a water supply valve (1);

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- i. a water supply port provided on the upper part of washing tub (the hole where pipe, 11, meets the cabinet body);
- j. a first water supply path (3) connecting the water supply valve and the water supply port (pipe, 3, is broadly and reasonably interpreted to read on the claim because it does connect the water supply valve and the water supply port, though it may not *directly* connect them);
- k. a second tap water supply tube connected to the output end of water supply valve (20), wherein the electrolytic water generating device (2) is positioned at the output end of the second tap water supply tube (see Figure 1);
- l. a third tap water supply tube (4) connected with the output end of water supply valve, and the modifying agent feeding device is connected with the output end of the third tap water supply tube (pipe, 4, is broadly and reasonably interpreted to be connected with the output end of the water supply valve, though it may not be *directly* connected to the output end), and wherein the electrolytic water generating device comprises:
  - i. an electrolyzing cell having a plurality of diaphragms (Figure 2, 23a-d), a water inlet (Figure 2, 50), a cathode chamber (24a-c) and an anode chamber (25a-b);
  - ii. a power supply converting device for converting alternating current into direct current to provide DC current to the electrolyzing cell (Figure 4, see rectifier, 36, and smoothing capacitor, 37; col. 6, lines 6-20); wherein the water inlet of the electrolyzing cell is connected to the second tap

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water supply tube of the output end of the water supply valve (see Figures 2 and 3, part 20); wherein the cathode chamber and the anode chamber of the electrolyzing cell are connected to a first drainpipe for providing electrolytic solution to the washing tub (Figure 2, the portion that connects to pipe 3), and a second drainpipe connected to the water drainage tube (Figure 2, the portion that connects to pipe 4),

16. The phrases “wherein the electrolyzed water-generating device provides electrolyzed water with a pH of at least 8.5” and “wherein the washing machine maintains...surface tension from 25 to 40 mN/m during washing operation” are functional limitations, which are considered to be met by the apparatus as taught by Sumida because it meets all the claimed structural limitations.

17. Also the phrase of the preamble “for washing items using washing water without addition of a detergent by the user” is considered to be intended use of the apparatus as taught by Sumida. The claimed intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. Also note that the modifying agent is not a positively recited claim element, therefore the phrase “the modifying agent is a mixture of one or more detergents” is not being given patentable weight.

18. Furthermore, it should be noted that the limitations to the connections between various elements, tubes, pipes and drains are considered to be extremely broad because the various connections have not been claimed such that the elements are

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*directly connected* to each other; hence, the following is just one possible interpretation of how Sumida could read on the claimed invention.

19. Sumida does not expressly disclose the claimed modifying agent feeding device. Sumida also does not expressly disclose a specific means for adding detergent to the dishwasher.

20. The claimed modifying agent feeding device would read on having a detergent container connected to a water supply line (such as lines 3 and/or 4 of Sumida), through a detergent injection line having a first valve, wherein the detergent is injected into the water supply line between second and third valves which define a buffer chamber, wherein the buffer chamber further includes a drain valve.

21. Lim discloses a dishwasher having a detergent reservoir (184) storing a liquid detergent. The detergent reservoir (184) communicates with a venturi tube (174) through a flexible hose (176). The venturi tube (174) connects to a first circulation pipe (170). Water flowing through the first circulation pipe (170) and venturi tube (174) draws out liquid detergent from the detergent reservoir (184). A pinch roller (204) is used as a valve to control the flow of detergent through the flexible hose (176). See Figures 8, 9 and 10; col. 8, lines 27-44; col. 9, line 10 through col. 10, line 15.

22. Because it is known in the art to have a detergent reservoir and to supply the detergent to a dishwasher by injection directly into a water pipe, and the results of the modification would be predictable, namely, an effective means of adding detergent for cleaning, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the detergent injection means of Lim. One of ordinary skill in the art



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would recognize several pipes in Sumida into which the detergent could be injected (3, 4, 11, 19, 20). It would have been obvious to try pipes 3 and/or 4 for detergent injection because there are only a finite number of pipes into which the detergent could be added. MPEP 2143 (E) – Obvious to Try.

23. Consider an arrangement where the detergent is injected into the first water supply path 3. The first water supply path 3 and the alkaline washing water tank 5 would read on the buffer chamber. Valve 9 would read on the water outlet valve. There is no explicit disclosure of a part corresponding to the claimed water inlet valve of the buffer chamber. However having an additional valve in the first water supply path 3 is considered obvious to one of ordinary skill in the art because valves are extremely well known in the art, and having additional valves yields the predictable result of giving greater control over fluid flow. There is no explicit disclosure of a part corresponding to the claimed emptying valve of the buffer chamber. However, this reads on having a duplication of the outlet of tank 5 and valve 9, which would have been obvious to one of ordinary skill in the art. The mere duplication of parts is not given patentable significance unless a new and unexpected result is produced. MPEP 2144.04 (VI) (B) – Duplication of Parts. Furthermore, the claimed emptying valve reads on having a drain in tank 5 with a stopper or valve for draining residual fluid to a sewer which is well-known feature for draining tanks and would have been obvious to one of ordinary skill.

24. Regarding Claims 4-6, Sumida is relied upon as applied to above. Sumida further discloses that the electrolyzing cell of the electrolyzed water generating device (2) and the liquid storage container of the modifying agent device (6) are externally

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hung and mounted on a lateral surface of a back of the washing machine (see Figure 1). The housing has a first perforation at an upper part (the portion where pipe, 11, leads into the housing) and a second perforation at a lower part of the rear panel of the housing (the portion where pipe, 18, exits the housing) for allowing a second drainpipe to pass through the second perforation for connecting to a water drainage tube (18).

25. Regarding Claim 8, the limitation of the electrolyzing cell and/or the liquid storage container being covered with a covering board is broadly and reasonably interpreted to simply read on the back panel of the housing of the dishwasher (see Figure 1).

26. **In the event that Claims 4-6 and 8 are not considered to be anticipated, they are rejected under 35 U.S.C. 103(a) as being unpatentable over Sumida et al. (US 5,947,135) in view of Lim et al. (US 5,331,986).**

27. Regarding Claims 4-6, Sumida is relied upon as above. If it is determined that Sumida does not expressly disclose that the electrolyzing cell and/or the liquid storage container of the modifying agent feeding device is externally hung and mounted on a lateral surface of the housing back of the washing machine, then because it appears, in Figure 1, that these devices are externally hung and mounted on a lateral surface of the washing machine, it would have been obvious to one of ordinary skill in the art, who is looking at the figures, to externally hang and mount them on a lateral surface of the washing machine.

28. Regarding Claim 8, the limitation of the electrolyzing cell and/or the liquid storage container being covered with a covering board is broadly and reasonably interpreted to simply read on the back panel of the housing of the dishwasher (see Figure 1).

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**29. Claim 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sumida et al. (US 5,947,135), in view of Lim et al. (US 5,331,986), and in further view of Hasegawa (JP 10-33448).**

30. Sumida in view of Lim is relied upon as applied above. As discussed above, the combination of Sumida in view of Lim teaches the claimed structure recited in Claim 9. Sumida further teaches electrolyzing tap water (abstract; Figure 1), supplying tap water to the electrolyzing cell for electrolyzing of the tap water to generate acidic ionized water and an alkaline ionized water respectively (col. 5, lines 32-50; col. 6, lines 21-36), supplying the alkaline water into a washing tub and storing the acidic ionized water for sterilizing items (col. 6, lines 37-55; see Figure 5, washing example 1, second washing step), starting a normal washing (see Figure 5, washing example 1, first or third washing step), and performing a rinsing operation after water is supplied into the washing tub again (see Figure 5, washing example 1, sixth washing step), and supplying a tap water to meet a predetermined water level (col. 5, lines 32-50; col. 6, lines 21-36).

31. Sumida in view of Lim does not expressly disclose simultaneously adding a dosage of modifying agent and activating the alkaline ionized water by the modifying agent fed by the modifying agent supply device.

32. Hasegawa discloses a dishwasher which supplies tap water to an opening (see Figure 1, the inlet to element 2), the tap water passes through a positive ion stripper (2; machine translation paragraph 19) before entering the electrolyzing cell (3; machine translation paragraph 19). The electrolyzing cell produces alkaline and acidic water, with the alkaline water being sent to tanks 4A and 4B and the acidic water being sent to

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tank 5 (machine translation paragraph 20). During washing, the alkali water is added to the tub and a modifying agent, "detergent," from hopper 19 is also added (machine translation paragraph 25). After washing, the acidic solution from tank 5 is used to rinse and sterilize the items (machine translation paragraph 25). Hasegawa also discloses that the pH of the alkaline water may be in the range of 10 or more (machine translation paragraph 15). The addition of a small amount of detergent to alkaline water allows the efficient removal of proteins, oils, and starches during washing (machine translation paragraphs 4 and 5).

33. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Sumida in view of Lim, as taught by Hasegawa, and to add a dosage of modifying agent (detergent) to the alkaline water, and to use a pH of 10 or more, yielding the predictable, and beneficial, results of enhancing the removal of proteins, oils and starches. And furthermore, because it is known to use different types of detergents, or to use them in various amounts, in response to various levels of soiling on items, it would have been obvious to one of ordinary skill in the art to optimize the concentration of detergents which could produce a washing solution having an electrical conductivity within the claimed range.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID CORMIER whose telephone number is (571) 270-7386. The examiner can normally be reached on Monday - Thursday 8:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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04/15/2010